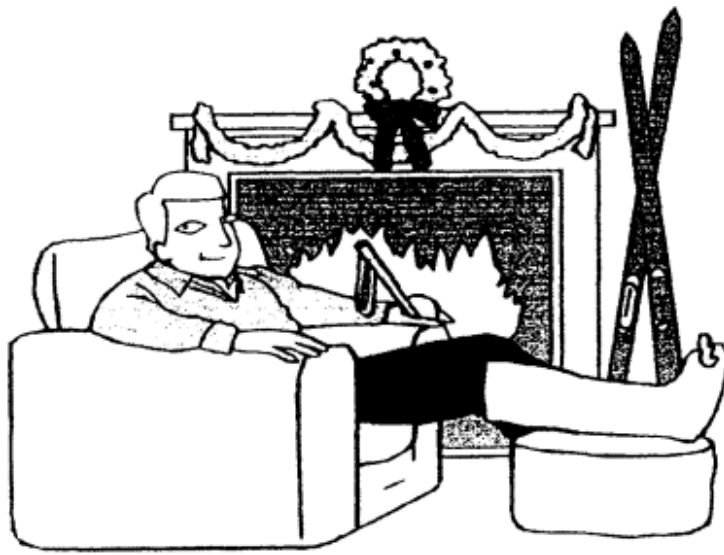Name: _____   Date: _____   Hour: _____

1st Semester Test REVIEW

A. OBSERVATIONS & INFERENCES: Questions # 1 – 15

Identify each statement about the picture below as an OBSERVATION or INFERENCE. Circle your answer.

1.	It is Christmas time in the picture.	OBSERVATION	INFERENCE
2.	The man broke his leg skiing.	OBSERVATION	INFERENCE
3.	The man has a cast on his leg.	OBSERVATION	INFERENCE
4.	The man is sitting in a chair.	OBSERVATION	INFERENCE
5.	The man only broke his right leg in the accident.	OBSERVATION	INFERENCE
6.	There are decorations on the mantle of the fireplace.	OBSERVATION	INFERENCE
7.	There are skis next to the fireplace.	OBSERVATION	INFERENCE

Identify each statement below as QUALITATIVE or QUANTITATIVE. Circle your answer.

8.	27% of students scored advanced on the test.	QUALITATIVE	QUANTITATIVE
9.	The tire made a loud pop sound.	QUALITATIVE	QUANTITATIVE
10.	The orange smells sweet.	QUALITATIVE	QUANTITATIVE
11.	One leaf is 9cm in length.	QUALITATIVE	QUANTITATIVE
12.	The drive will take over 7 hours.	QUALITATIVE	QUANTITATIVE
13.	The rock felt very rough in my hand.	QUALITATIVE	QUANTITATIVE
14.	The stain got darker over time.	QUALITATIVE	QUANTITATIVE
15.	The temperature of the room increased by 8°F.	QUALITATIVE	QUANTITATIVE

B. VARIABLES: Questions # 16 – 20

Use this scenario to answer questions # 16 – 18. Joanna read that certain perfumes would cause bees to leave the hive and act in an agitated fashion. She decided to investigate the response of bees to five different perfumes- Ralph Lauren, Armani, Mark Jacobs, Vera Wang, and the last is an odorless liquid. She placed a saucer containing 20mL of perfume A 10 meters from a beehive. She then recorded the total number of bees that emerged from the hive during a 15-minute interval and made observations on their behavior. Using a 30-minute interval between tests to allow recovery time for the bees, she then repeated the procedure to test the remaining three samples. Each test was conducted on the same day with similar weather conditions.

16. What is the independent variable?
   A. Amount of perfume
   B. Bee behavior
   C. Season
   D. Type of perfume

17. What is the dependent variable?
   A. Amount of perfume
   B. Bee behavior
   C. Season
   D. Type of perfume

18. Which of the following does NOT need to be held constant in this experiment?
   A. Amount of perfume
   B. Season
   C. Temperature
   D. What Joanna wears

Use this scenario to answer questions # 19 & 20. Allen wondered if active metals would be effective in preventing rust. To investigate, he placed each of the following into a separate test tube containing water: one iron nail; one iron nail wrapped with an aluminum strip; one iron nail wrapped with a magnesium strip; and one iron nail wrapped in a lead strip. He used the same amounts of water from the same source, equal amounts of the metal wraps, and the same type and size of iron nails. At the end of five days, he described the amounts of rusting either as small, moderate, or large. He also recorded the color of the water.

19. What is the independent variable?
   A. Amount of hydrogen gas
   B. Amount of rust
   C. Size of nail
   D. Type of metal around nail

20. What is the dependent variable?
   A. Amount of hydrogen gas
   B. Amount of rust
   C. Size of nail
   D. Type of metal around nail

C. GRAPHING: Questions # 21 – 25.

21. What is found on the x-axis of every graph?
- **A.** Dependent variable, or the thing being measured
- **B.** Independent variable, or the thing being changed on purpose
- **C.** Legend explaining what different colors and shapes mean on the graph
- **D.** Title explaining the purpose of the graph

22. What is the difference between bar graphs and line graphs?
- **A.** Bar graphs only show one type of data, line graphs show only multiple types of data.
- **B.** Bar graphs show a comparison of data, line graphs show change in data over time.
- **C.** Line graphs only show one type of data, bar graphs show only multiple types of data.
- **D.** Line graphs show a comparison of data, bar graphs show change in data over time.

Number of Moths By Year (x100)

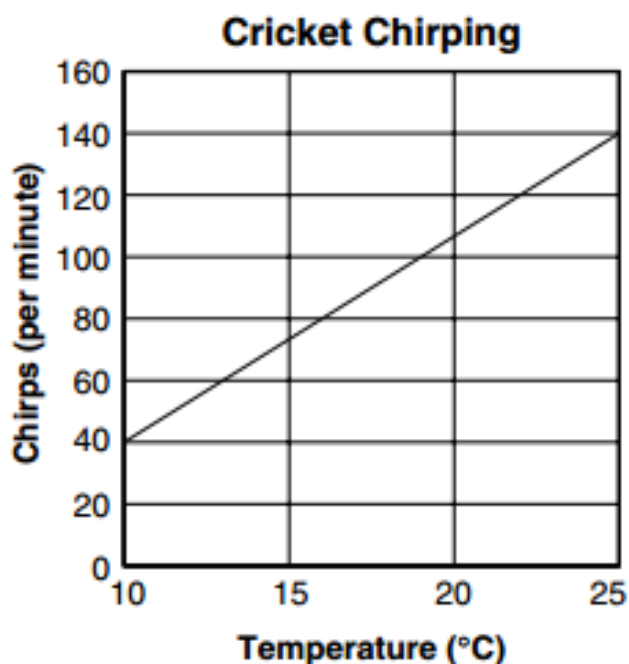| Kind of Moth	1800	1850	1875	1900	1925	1950	1975
light	100	97	90	65	21	10	7
dark	0	3	10	35	79	90	93

23.   Scientists have spent many years studying the peppered moth, which is a species that has adapted its color from light to dark in reaction to environmental pollution. Which of the following line graphs represents the data from the table?

A.

B.

C.

D.
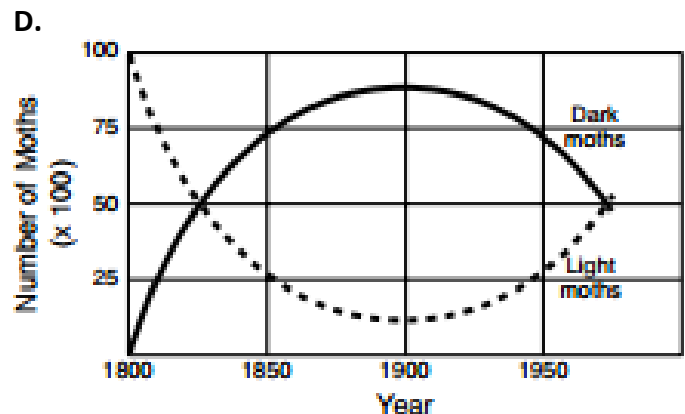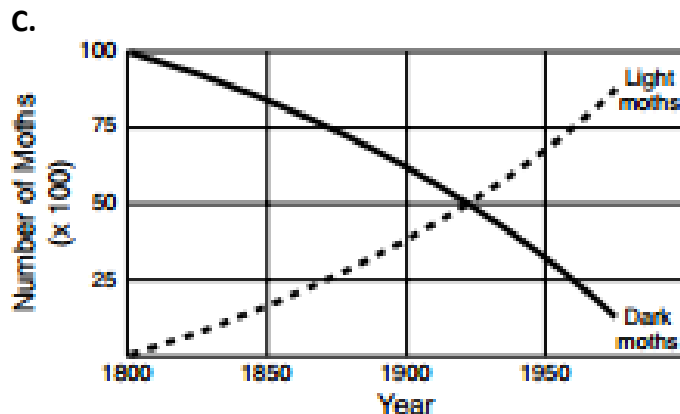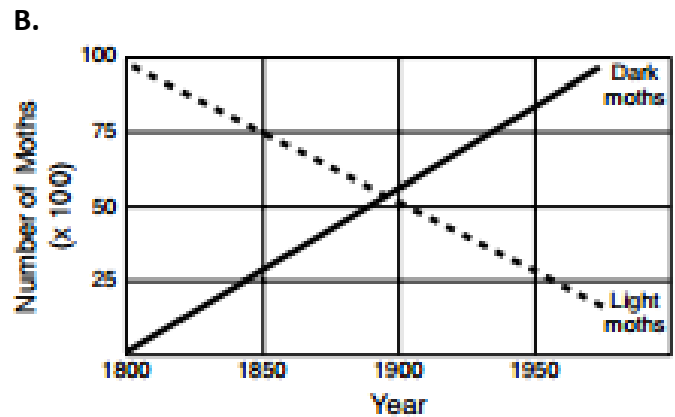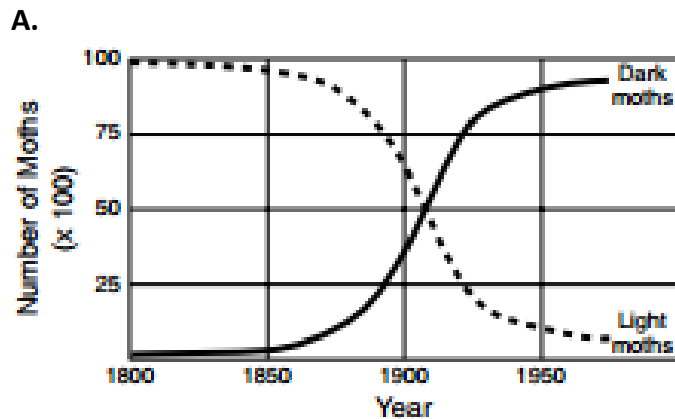
24. According to this graph, which of these is most important in developing the biomass of these plants.
  A. Nitrates
  B. Sulfates
  C. Magnesium
  D. Iron
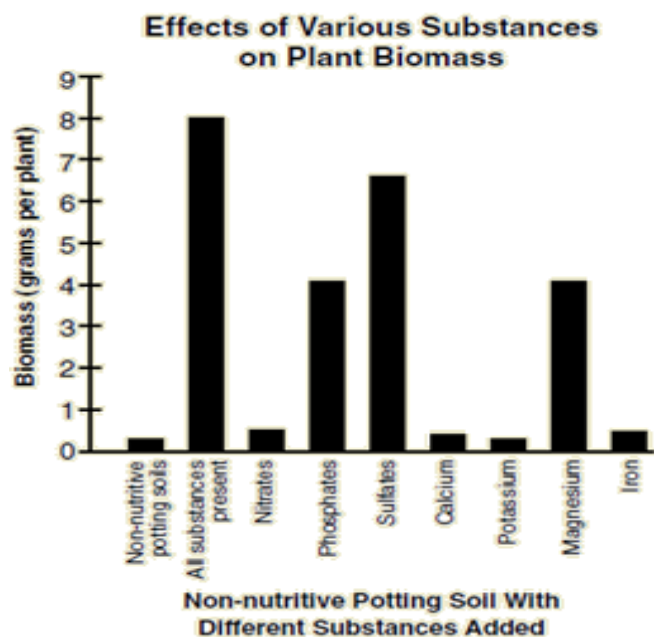
25. Crickets chirp to attract other crickets. The temperatures and rates of their chirping are graphed. Which statement below is most likely true for the data represented in the graph?
  A. The cooler the temperature, the louder the crickets chirp.
  B. The crickets cannot chirp at temperatures lower than 10°C.
  C. The warmer the temperature, the more often crickets chirp.
 D. The temperature and the chirping of crickets are not related.

Effects of Various Substances on Plant Biomass

Biomass (grams per plant) vs. Non-nutritive Potting Soil With Different Substances Added

Cricket Chirping

Chirps (per minute) vs. Temperature (°C)

D. PROPERTIES OF MATTER Questions # 26 – 40.

Identify each change as PHYSICAL or CHEMICAL. Circle your answer.

26. A rusting nail	PHYSICAL	CHEMICAL
27. Burning paper	PHYSICAL	CHEMICAL
28. Fogging a mirror with your breath	PHYSICAL	CHEMICAL
29. Frying chicken	PHYSICAL	CHEMICAL
30. Mixing sugar with coffee	PHYSICAL	CHEMICAL
31. Paper ripping	PHYSICAL	CHEMICAL
32. Slicing potatoes for fries	PHYSICAL	CHEMICAL

Fill in the missing States of Matter information using the image below.

A   Gas   B   Liquid   C   Solid
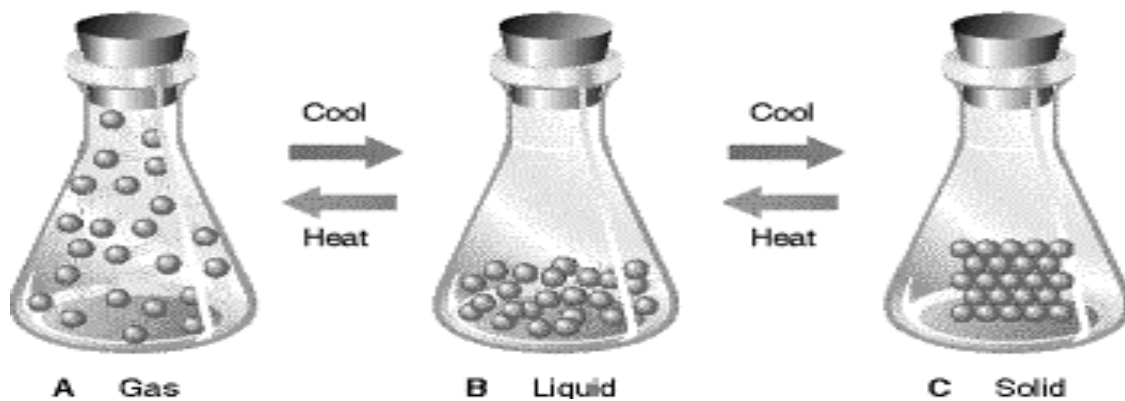
State of Matter	Gas	Liquid	Solid
Energy of Particles	High	33.	34.
Movement of Particles	35.	Sliding	36.
Space between Particles	37.	Medium	Very little

38. Which of the following causes particles to have the highest energy?
   A. Increase in thermal energy (heat)
   B. Decrease in thermal energy (heat)
   C. Condensation
   D. Freezing point

39. Density is _____.
   A. A chemical property used to identify substances
   B. A physical property that is specific to each substance
   C. A physical property that can be changed
   D. A chemical property that can be changed

**40.** Explain the Law of Conservation of Matter in a 10-word sentence.

_____

_____

E.   ENERGY: Questions # 41 – 55.

41. Explain the Law of Conservation of Energy in a 10-word sentence.

_____

_____

Identify each type of heat transfer as CONVECTION, CONDUCTION, or RADIATION. Circle your answer.

42. Boiling water	CONDUCTION	CONVECTION	RADIATION
43. Frying a pancake	CONDUCTION	CONVECTION	RADIATION
44. Heat you feel from a hot stove	CONDUCTION	CONVECTION	RADIATION
45. Moves as a wave	CONDUCTION	CONVECTION	RADIATION
46. Occurs within fluids	CONDUCTION	CONVECTION	RADIATION
47. Sun's rays reaching Earth	CONDUCTION	CONVECTION	RADIATION
48. Transfer through solids	CONDUCTION	CONVECTION	RADIATION
49. Transfer through open space	CONDUCTION	CONVECTION	RADIATION

The diagram below shows the steps involved in using the energy in steam to generate electricity. Use the diagram to help you fill in the blanks in the story. Here are the forms of energy that fit into the blanks: CHEMICAL, ELECTRICAL, HEAT, LIGHT, and MECHANICAL. Some forms of energy may be used more than once.
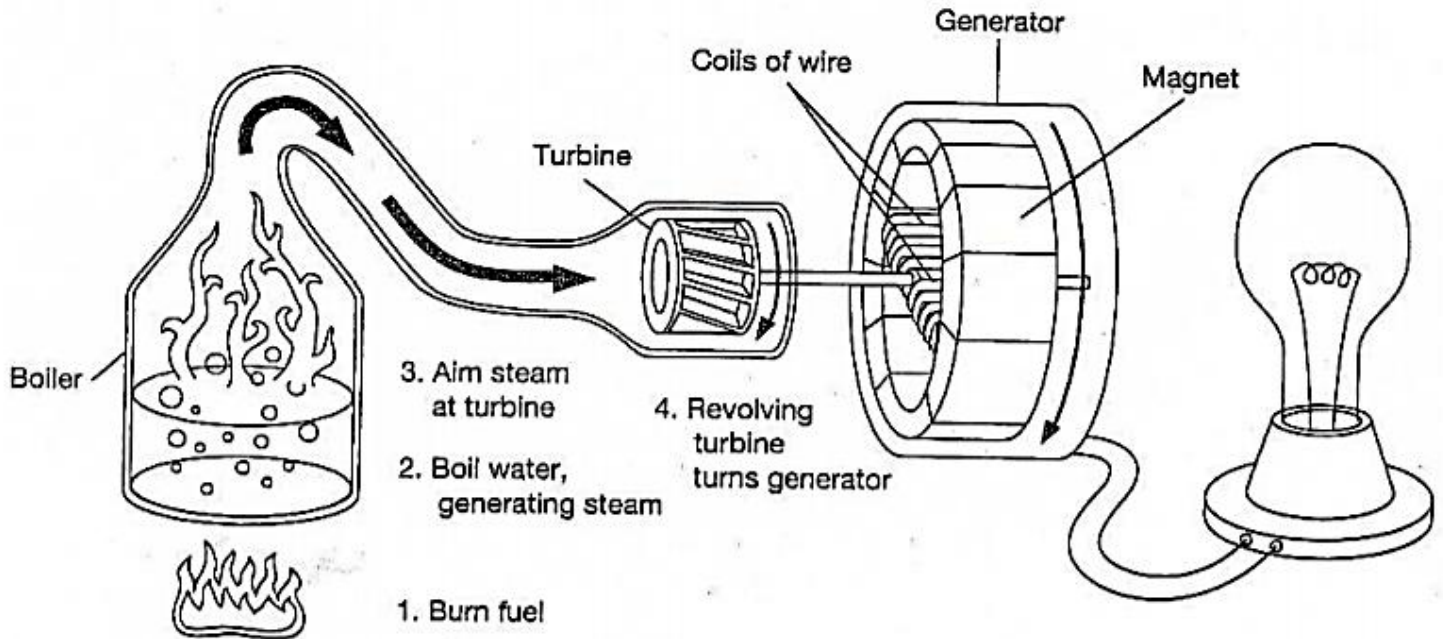
(50) _____ energy from gas, oil, or coal provides **(51)** _____

energy to water to produce steam. A turbine changes the energy of the steam into the

(52) _____ energy of the rotating turbine and generator. The generator converts this

energy into **(53)** _____ energy. The lamp is an energy converter, changing

(54) _____ energy to **(55)** _____ energy.

F. Earth's Place in the Universe: Questions # 56 - 80.

**Identify each statement as TRUE or FALSE. Circle your answer.**

56. Earth's Moon orbits the Sun.	TRUE	FALSE
57. Planets orbit the Moon.	TRUE	FALSE
58. A galaxy is larger than a universe.	TRUE	FALSE
59. The Milky Way is the only galaxy in the universe.	TRUE	FALSE
60. The Earth experiences tides due to the gravitational pull between the Earth and the Moon.	TRUE	FALSE

Label each of the following with the type of eclipse represented in the diagram.
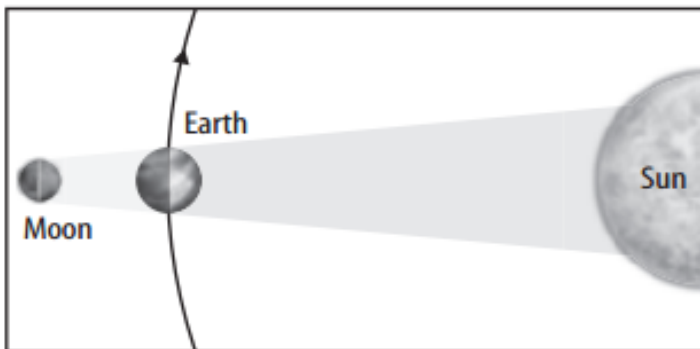
61. _____   **62.** _____
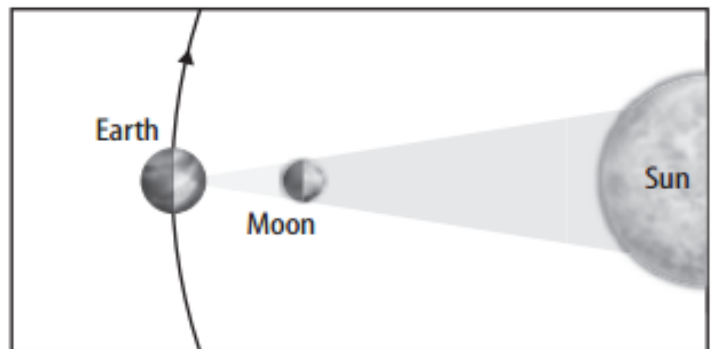
63. How can you tell if the moon is in a waxing phase?
   A. It is a Full Moon
   B. Moon is between the Earth and Sun
   C. More of the left side of the moon is visible
   D. More of the right side of the moon is visible

64. How can you tell if the moon is in a waning phase?
   A. It is a New Moon
   B. Less of the left side of the moon is visible
   C. Less of the right side of the moon is visible
   D. Moon is between the Earth and Sun

65. How can you describe a moon shape that has more than ½, but not 100%, of the moon showing?
   A. Crescent
   B. Full
   C. Gibbous
   D. New

66. How can you describe a moon shape that has less than ½, but not 0%, of the moon showing?
   A. Crescent
   B. Full
   C. Gibbous
   D. New

67. When do spring tides occur?
   A. First Quarter and Third Quarter
   B. Full Moon and New Moon
   C. Full Moon only
   D. In the spring

68. When to neap tides occur?
   A. First Quarter and Third Quarter
   B. Full Moon and New Moon
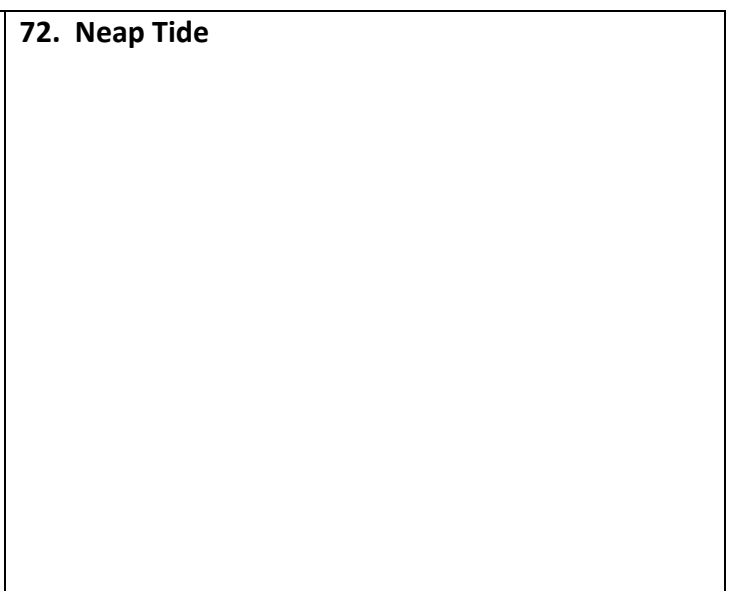   **C.** Full Moon only
   D. In the fall

69. What is unique about spring tides?
   A. High tides are highest and low tides are highest
   B. High tides are highest and low tides are lowest
   C. High tides are lowest and low tides are highest
   **D.** High tides are lowest and low tides are lowest

70. What is unique about neap tides?
   A. High tides are higher than normal
   B. There is little difference between high tide and low tide
   C. There is no observable high or low tide
   D. There is the greatest difference between high and low tide

Draw a diagram to represent the positions of the Earth, Moon, and Sun during Spring and Neap tides.

71. Spring Tide	72. Neap Tide

Use the moon calendar below to answer identify the dates for each phase of the moon.
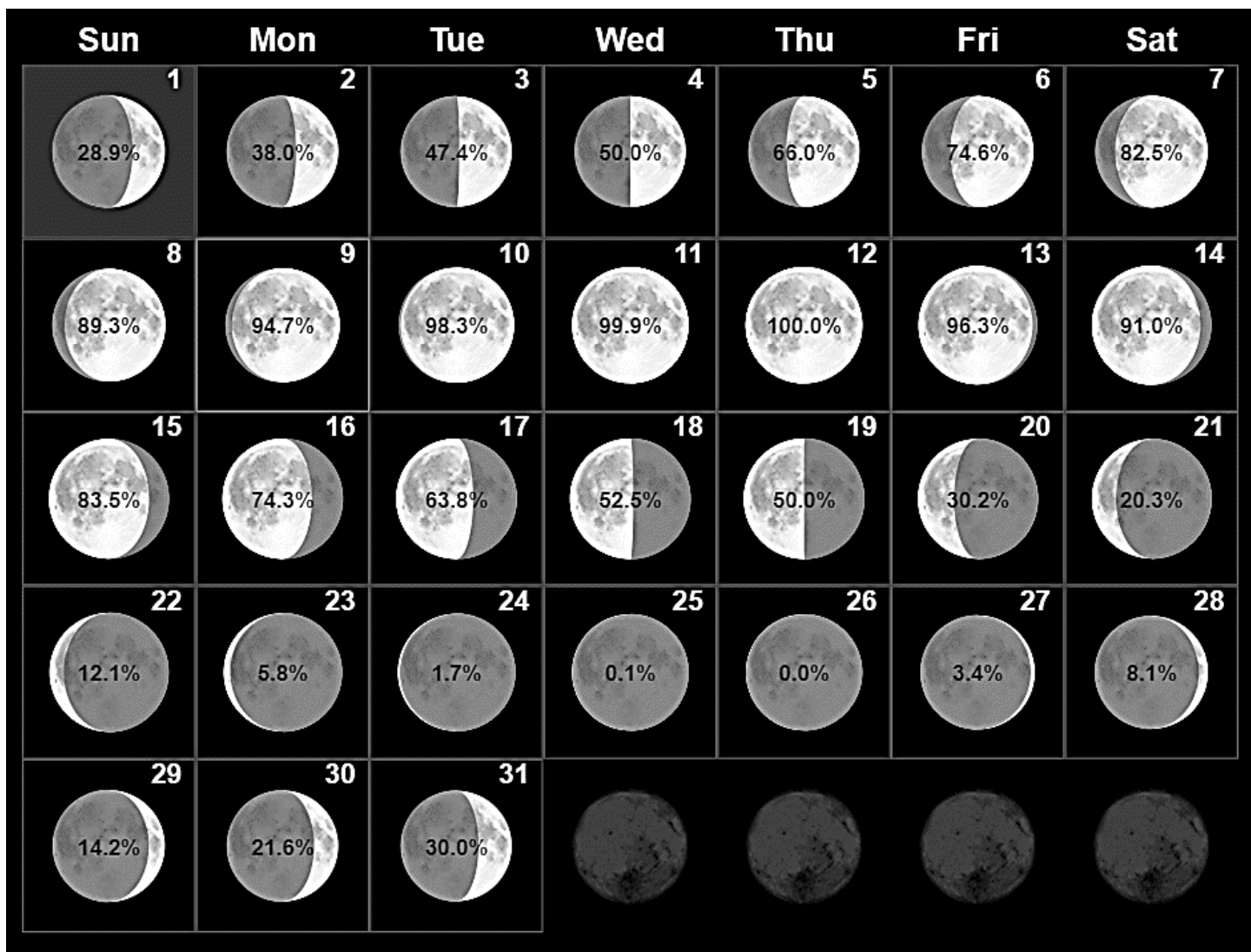
Moon Phase	Date/Dates
73. Full Moon	
74. New Moon	
75. First Quarter	
76. Third/Last Quarter	
77. Crescents	
78. Gibbous	
79. Waxing Phases	
80. Waning Phases	